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## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P 1853 PCT/sg	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/DE2003/003227	International filing date (day/month/year) 26 September 2003 (26.09.2003)	Priority date (day/month/year) 27 September 2002 (27.09.2002)
International Patent Classification (IPC) or national classification and IPC C03C 10/04		
Applicant SCHOTT AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 27 February 2004 (27.02.2004)	Date of completion of this report 17 August 2004 (17.08.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No.

PCT/DE2003/003227

**I. Basis of the report**

1. With regard to the elements of the international application:\*

the international application as originally filed

the description:

pages \_\_\_\_\_ 1-19 \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

the claims:

pages \_\_\_\_\_ 1-12 \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, as amended (together with any statement under Article 19

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

the drawings:

pages \_\_\_\_\_ 1/1 \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

the language of publication of the international application (under Rule 48.3(b)).

the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4.  The amendments have resulted in the cancellation of:

the description, pages \_\_\_\_\_

the claims, Nos. \_\_\_\_\_

the drawings, sheets/fig \_\_\_\_\_

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE 03/03227

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims	1-12	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

**2. Citations and explanations****1. Documents**

This report refers to the following documents:

D1: US-A-5 726 108 (KURIYAMA IKUJO ET AL.) 10 March  
1998

D2: EP-A-0 755 901 (YAMAMURA GLASS CO LTD) 29  
January 1997.

**2. Subject matter of the application**

Claims 1-7 of the application define a crystallizable glass of the magnesium-containing aluminosilicate type.

Claim 8 defines a glass ceramic that can be produced by heating this glass, and claims 9-12 define uses of this glass.

**3. Support by the description**

The feature in claim 1 that the glass can contain 0.1 to 30% by weight As<sub>2</sub>O<sub>3</sub> in place of the same proportion of Y<sub>2</sub>O<sub>3</sub> is not mentioned in the description. Claim 1 therefore (with regard to As<sub>2</sub>O<sub>3</sub>) is not supported by the description as prescribed under PCT Article 6.

Moreover, the examples support only the Y<sub>2</sub>O<sub>3</sub> content, and not the possibility that Y<sub>2</sub>O<sub>3</sub> can be replaced by one of the oxides Ln<sub>2</sub>O<sub>3</sub>, As<sub>2</sub>O<sub>3</sub> or Nb<sub>2</sub>O<sub>5</sub>.

**4. Novelty and inventive step**

D1 (see the claims and the examples) and D2 (see the claims and the examples) both describe a glass ceramic with a composition that contains SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, MgO, B<sub>2</sub>O<sub>3</sub> and P<sub>2</sub>O<sub>5</sub> in ranges that overlap the claimed ranges. The composition could also contain Nb<sub>2</sub>O<sub>5</sub> or La<sub>2</sub>O<sub>3</sub>. None of the examples in D1 or D2 falls within the ranges claimed in the present application. The modulus of elasticity is not described in either D1 or D2.

Novelty and inventive step are recognized because the subject matter of claims 1-12 constitutes a novel and non-obvious selection from among known glass and glass ceramic compositions and because the problem of preparing crystallizable glasses that have a low SiO<sub>2</sub> content and can be converted into glass ceramics with a modulus of elasticity > 110 GPa is solved in a non-obvious way.